Gender agreement in Greek in the production of Greek-Italian bilingual children: A task effect?

Gender assignment and agreement have often been shown to be vulnerable domains in bilingual language acquisition (cf. a.o., Bellamy et al. 2018 and Schwartz et al. 2015, respectively). However, results vary depending on which structures are taken into account (e.g., noun-adjective agreement when the two elements are adjacent to – as in Montrul et al. 2008 – or distant from each other – as in Osch et al. 2014; see also Torregrossa & Bongartz 2018), which task is used to assess children's knowledge of gender (see, e.g., Polinsky 2008) and to what extent the children are proficient in (or exposed to) the target language (Unsworth 2013; Mitrofanova et al. 2018). As for Greek – the language at stake in this paper – the study by Egger et al. (2017) shows that Dutch-Greek bilingual children tend to overextend the use of neuter-gender morphology to feminine and masculine nous (a pattern which is also found in early stages of monolingual language acquisition – Tsimpli 2014), which suggests that the neuter gender in Greek has a default nature. However, given that Dutch also disposes of neuter morphology (on determiners), it is not clear to what extent the overproduction of neuter forms in Greek is a cross-linguistic effect (from Dutch to Greek) or an effect of bilingualism. This paper aims to shed some new light on the abovementioned issues by considering another language combination, i.e., Greek and Italian, in which Italian does not dispose of neuter morphology. Furthermore, we will investigate to what extent the children's performance in Greek on gender agreement between a clitic and its antecedent in discourse is dependent on the type of task. Crucially, the phenomenon considered in this paper is situated at the interface between syntax and discourse – and thus differs from 'core' syntactic phenomena, such as noun-adjective agreement as analysed by Montrul et al. (2008), since it requires knowledge of the syntax of clitics, of their morphosyntactic features and discourse management (i.e., the matching between the clitic pronoun and its discourse antecedent) – see Sorace (2011).

36 Italian-Greek bilingual children (mean age 9;9) participated in the study. All the children were born and raised in Greece and they attend an Italian immersion school in Athens (Greece), in which Italian is the main medium of instruction. Children were assessed for language proficiency in Greek based on the *Expressive Vocabulary Test* (Renfrew 2005). The mean of correct answers amounts to 35.6 (over 50) – SD 9.6. We designed three different tasks: a) a production task, in which the children had to retell a story of the Edmonton Narrative Norms Instrument (ENNI, Schneider et al. 2005), involving four animate characters of different gender (two males and two females). In the narratives, we took into account only clitics and we counted the forms exhibiting a gender error. Each child was then associated with the number of incorrect clitic produced; b) a metalinguistic awareness task, in which the children were asked to judge the acceptability of Greek sentences that describe some pictures. Among other structures, the task contains two sentences that are correct in terms of gender agreement on the clitic and two sentences that are incorrect (as in (1), where the masculine clitic *ton* in the second clause does not match the feminine antecedent in the first clause). The children were asked to detect and correct the error contained in the sentence and were given 1-point if they managed – and 0-point if they did not.

(1)   Kita tin mathitria. O mathitis ton aggizi.

         Look. Pres. Act. Imp. 2sg. the. Acc. Fem. Sg. student. Acc. Fem. Sg. The. Acc. Masc. Sg. student. Acc. Masc. Sg him. Acc. Masc. Sg. touch. Pres. Act. Ind. 3 sg.

         "Look at the (female) student. The (masculine) student touches him".

c) a sentence repetition task (SRT) targeting syntactic structures of different complexity (Author 1 & Author 2 2019); we only considered if, in repeating the sentences, the child produced a gender mistake on the clitic. Again, each child was associated with the number of gender mistakes on clitics which were produced. It should be noticed that the three tasks differ from each other in terms of the degree of explicitness of knowledge involved: Production tasks require on-line integration of syntax and discourse – and are thus more vulnerable to processing constraints –, SRTs tap more into implicit grammatical knowledge (Marinis & Armon-Lotem 2014) and, finally, metalinguistic awareness tasks require explicit grammatical knowledge of the target structures. The order in which the three activities were administered was counterbalanced across participants.

We performed a one-way repeated ANOVA with number of mistakes (for each task) as dependent variable and type of task as independent one. The ANOVA analysis revealed a significant effect of type of task (F (1) = 3.6, p = .04), showing that the performance in metalinguistic awareness was better than the one in SRT which was in turn better than the one in narratives. Interestingly, the children make relatively few errors in all three tasks, i.e., narratives (14 in total; M = -.39, SD = .73), SRT (9 in total; M = -.25, SD = .65) and metalinguistic awareness (3 in total; M = -.05, SD = .33). Among these errors, only three (across all three tasks) consist in the use of a neuter form instead of a masculine or feminine. Also, a qualitative analysis of the errors reveals an interesting pattern: in almost 60% of cases, an error occurs if the clitic is separated from its antecedent by a nominal phrase of different gender, and the error consists in gender attraction motivated by the intervening phrase. This is shown in (2), in which the clitic should refer to the masculine character "the old rabbit", but takes the gender of the intervening character "the female dog" instead.

(2)   O gerolagos kathotane ke pige i skilitsa ke tin parakolousan jia balonia.

The. Nom. Masc. Sg. old rabbit. Nom. Masc. Sg. was sitting. Impf. Act. Ind. 3sg. and went. Past. Act. Ind. 3sg. The. Nom. Fem. Sg. dog. Nom. Fem. Sg. and her. Acc. Fem. Sg. were asking. Impf. Act. Ind. 3pl. for balloons. Acc. Neut. Pl.

"The old rabbit was just sitting and the female dog went to him and thez were asking her for balloons".

The results of this study are consistent with a processing account of gender errors with clitics among bilingual speakers. In fact, gender errors are more frequent during on-line integration of syntactic and discourse information – as happening in sentence production – than in the other two tasks. Crucially, SRT involves more processing resources than metalinguistic awareness tasks (Marinis & Armon-Lotem 2014), which is reflected in a better performance in the latter task. The qualitative analysis of the errors (see (2)) also supports the processing account, since the errors are related to an intervening nominal phrase with mismatching features (Belletti et al. 2012). Finally, the data do not show any defaulting to neuter (contrary to Egger et al. 2017), suggesting (again) that among the bilinguals considered in this study, clitic knowledge is intact. The results of the study will be discussed with reference to the children's performance in Italian in all three above-mentioned tasks, which will be analysed in near future.

Figure 1: Number of gender errors with clitics in each task (narratives, metalinguistic awareness and sentence repetition task, respectively). In each task, each error was counted as -1.
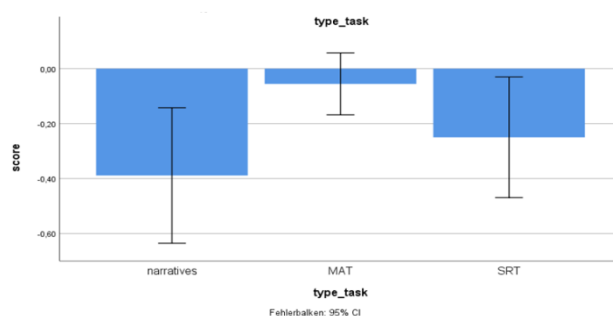
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